

nity to specify that a direct-dial operation is intended by tapping screen 102 in a location where the direct-dial number is displayed. Thereafter, during the current direct-dial operation, subsequent keystrokes are interpreted as numeric. If a key having no numeric secondary value is pressed, the invention may ignore the keystroke or may provide auditory or other feedback to indicate that the keystroke is not accepted.

[0124] In one embodiment, the user may enter numeric characters as part of the lookup string (for example, if the company name contains a numeric character, such as "3Com"). A "num-lock" mode may be provided, as is known in the art, for entering numeric characters in this manner. The user may enter such a mode by pressing option key 205 before pressing key 202 having a numeric secondary value. The numeric value (rather than the alphabetic value) of the pressed key 202 will then be added to the lookup string. In another embodiment, the invention performs the filtering operation using all possible combinations of primary and secondary values for lookup string keystrokes. Thus, a lookup string of "ICOM" would match directory entries having relevant fields containing "ICOM", "3COM", "ICO9", and any other combination of primary and secondary values for the entered keystrokes.

[0125] In an alternative embodiment, keys may be associated with other values besides the primary and secondary values. For example, the "E" key may be associated with other values similar to or related to "E", such as "e", "ê" and "è". Individual characters in the lookup string are considered to match these

other values. Thus, a lookup string of "BET" would match "B ê te". The other values may or may not appear on the keyboard itself. In addition, the other values may be associated with keys 201 having non-numeric secondary values, keys 202 having numeric secondary values, and/or keys having no secondary values (not shown).

[0126] In an alternative embodiment, in performing the directory filter step 306, in addition to identifying directory records having fields that match the lookup string, the invention also identifies directory records having a telephone number that matches numeric dial string 404 (if such a string is valid and available). Thus, filtered directory set 405 includes records that contain matching telephone numbers as well as matching names (or other fields). The user can thereby enter the first few digits of a telephone number and, if the corresponding directory record exists within directory 403, the user may select the desired record from a displayed list of records having a telephone number that matches the entered digits. The user can select the desired record and dial the associated number without having to enter the rest of the number.

[0127] In another embodiment, if filtered directory set 405 is reduced to one record, the invention may automatically select that record for retrieval, or for dialing, or for some other operation. Alternatively, the user interface of the invention may provide an "auto-fill" function whereby the remainder of the name (or other field) is automatically filled in on behalf of the user, once a particular re-

cord can be identified from the user's input. Techniques of "auto-filling" in this manner are well known in the art.

[0128] In one embodiment, the user may override the invention's determination as to whether a directory filtering operation or a direct-dial operation is intended. The invention may provide a preference screen for selecting which operation is active. Alternatively, a command may be available for manually specifying which operation is intended, or which mode of operation is desired. Such specification may be made before, during, or after entry of the keystrokes.

[0129] In one embodiment, feedback for each of the possible operations is displayed, or is not displayed, according to user preferences or other considerations. Thus, where such feedback might confuse the user, the invention may avoid such confusion. For example, the user may specify in a preference screen that dial strings are to be displayed in a different color, style, or font than directory filter results. One skilled in the art will recognize that other options for configuring or personalizing the operation of the invention may be contemplated.

Multiple-Field Filtering

[0130] In one embodiment, the invention filters directory records concurrently based on multiple fields. With each keystroke, all non-matching records are filtered out, and matches are displayed (although if there are more matches than can fit on screen 102, scrolling is enabled to allow navigation among matching records). The lookup string is applied to several fields concurrently, so that